

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

5

Listing of Claims:

1 Claim 1 (previously presented): A flexible, hollow waveguide for transmitting  
2 radiation in visible and IR regions, comprising:

3 (a) a hollow, flexible tube having a transparent annular body defining a bore  
4 with a smooth inner bore surface;

5 (b) a reflective metal layer disposed upon the smooth inner bore surface; and

6 (c) a composite of dielectric, sulfide-containing materials having a high  
7 refractive index ratio, said sulfide-containing materials disposed upon said reflective  
8 metal layer and forming a photonic, bandgap tube transmitting in the visible and IR  
9 regions.

1 Claim 2 (original): The waveguide in accordance with claim 1, wherein said hollow,  
2 flexible tube is composed of glass.

1 Claim 3 (original): The waveguide in accordance with claim 1, wherein said hollow,  
2 flexible glass tube is composed of silica-glass.

1 Claim 4 (original): The waveguide in accordance with claim 1, wherein said  
2 composite of dielectric, sulfide-containing materials comprise disparate refractive  
3 indices of approximately 2:1.

1 Claim 5 (original): The waveguide in accordance with claim 4, wherein said metallic  
2 layer is selected from a group of metals consisting of: Ag, Au, Cu, Pt, Ni, Mb, Al, and  
3 combinations thereof.

1 Claim 6 (original): The waveguide in accordance with claim 1, further comprising:  
2 (d) an outer layer surrounding the hollow, flexible tube.

1 Claim 7 (currently amended): The waveguide in accordance with claim 4, wherein  
2 the composite of sulfide-containing materials respectively comprise paired composite  
3 layers of cadmium sulfide and lead sulfide.

1 Claim 8 (previously presented): The waveguide of claim 4, wherein said outer layer  
2 is composed of a material selected from a group of materials consisting of plastic,  
3 and silicone.

1 Claim 9 (currently amended): A flexible, hollow waveguide, comprising:  
2 (a) a flexible, hollow tube having a transparent annular body defining a bore  
3 with a smooth inner bore surface;  
4 (b) a metallic layer disposed upon the smooth inner bore surface; and

5 (c) a composite of dielectric materials disposed upon the metallic layer  
6 featuring disparate refractive indices with a ratio of approximately 2:1. 2.1, wherein  
7 the composite of dielectric materials form sulfide-containing layers.

1 Claim 10 (currently amended): The waveguide in accordance with claim 9, wherein  
2 said composite of dielectric materials respectively comprise two sulfide sulfide-  
3 containing layers.

1 Claim 11 (original): The waveguide in accordance with claim 9, wherein said metallic  
2 layer is selected from a group of metals consisting of: Ag, Au, Cu, Pt, Ni, Mb, Al, and  
3 combinations thereof.

1 Claim 12 (previously presented): The waveguide in accordance with claim 9, further  
2 comprising:  
3 (d) an outer layer surrounding the hollow flexible tube.

1 Claim 13 (canceled).

1 Claim 14 (currently amended): The waveguide in accordance with claim 9, wherein  
2 the composite of dielectric materials respectively comprise cadmium sulfide and lead  
3 sulfide.

1 Claim 15 (previously presented): The waveguide in accordance with claim 11,  
2 wherein said outer layer is selected from a group of materials consisting of plastic,  
3 and silicone.

1 Claim 16 (previously presented): A flexible, hollow waveguide for transmitting  
2 radiation in visible and IR regions, comprising:

3 (a) a hollow, flexible tube having a transparent annular body defining a bore  
4 with a smooth inner bore surface; and  
5 (b) a composite of dielectric, paired sulfide-containing materials having a high  
6 refractive index ratio, said sulfide-containing materials disposed upon said hollow  
7 tube, and forming a photonic, bandgap tube transmitting in the visible and IR  
8 regions.

1 Claim 17 (previously presented): The waveguide in accordance with claim 16,  
2 wherein said hollow, flexible tube is composed of glass.

1 Claim 18 (previously presented): The waveguide in accordance with claim 16,  
2 wherein said hollow, flexible glass tube is composed of silica-glass.

1 Claim 19 (previously presented): The waveguide in accordance with claim 16,  
2 wherein said composite of dielectric, sulfide-containing materials comprise disparate  
3 refractive indices of approximately 2:1.

1 Claim 20 (previously presented): The waveguide in accordance with claim 19, further  
2 comprising:

3 (d) an outer layer surrounding the hollow, flexible tube.

1 Claim 21 (currently amended): The waveguide in accordance with claim 16, wherein  
2 the composite of sulfide-containing materials respectively comprise paired composite  
3 layers of cadmium sulfide and lead sulfide.

1 Claim 22 (previously presented): The waveguide of claim 20, wherein said outer  
2 layer is composed of a material selected from a group of materials consisting of  
3 plastic, and silicone.

1 Claim 23 (currently amended): A flexible, hollow waveguide, comprising:  
2 (a) a flexible, hollow tube having a transparent annular body defining a bore  
3 with a smooth inner bore surface; and  
4 (b) a composite of dielectric materials disposed upon the smooth inner bore  
5 surface of said transparent annular body, featuring disparate refractive indices with a  
6 ratio of approximately 2:1. 2.1, wherein said composite of dielectric materials  
7 respectively comprise two sulfide layers.

1 Claim 24 (canceled).

1 Claim 25 (previously presented): The waveguide in accordance with claim 23, further  
2 comprising:

3 (d) an outer layer surrounding the hollow flexible tube.

1 Claim 26 (currently amended): The waveguide in accordance with claim 23, wherein  
2 the composite of dielectric materials respectively comprise cadmium sulfide and lead  
3 sulfide.

1 Claim 27 (previously presented): The waveguide in accordance with claim 25,  
2 wherein said outer layer is selected from a group of materials consisting of plastic,  
3 and silicone.

1 Claim 28 (currently amended): A method of fabricating a flexible, hollow waveguide  
2 using liquid phase deposition, comprising the steps of:

3 (a) Depositing depositing a metallic layer on a smooth, inner bore surface of a  
4 hollow, flexible, silica-glass tube; and

5 (b) depositing at least one layer containing a sulfide upon said metallic layer  
6 two sulfide-containing layers, cadmium sulfide and lead sulfide, respectively, upon  
7 said metallic layer of step (a).

1 Claim 29 (canceled).

1 Claim 30 (canceled).

1 Claim 31 (previously presented): A method of fabricating a flexible, hollow  
2 waveguide using liquid phase deposition, comprising the steps of:

3 (a) depositing at first layer of cadmium sulfide upon an inner, smooth bore  
4 surface of a hollow silica-glass tube; and

5 (b) depositing at least a second layer of lead sulfide over said first layer of  
6 cadmium sulfide.

1 Claim 32 (previously presented): The method in accordance with claim 31, wherein  
2 multiple sulfide-containing layers of cadmium sulfide and lead sulfide, respectively,  
3 are stack deposited upon said inner, smooth bore of said hollow tube.

1 Claim 33 (new): A method of fabricating a flexible, hollow waveguide using liquid  
2 phase deposition, comprising the steps of:

3 (a) depositing a metallic layer on a smooth, inner bore surface of a hollow,  
4 flexible, silica-glass tube; and

5 (b) depositing a cadmium sulfide layer upon said metallic layer of step (a).